

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 03/12690

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L23/544

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 38 03 336 A (SIEMENS AG) 17 August 1989 (1989-08-17) the whole document ---	1-8, 10, 11
X	US 6 204 484 B1 (HU YAO ZHI ET AL) 20 March 2001 (2001-03-20) column 8, line 38 -column 9, line 2 ---	1, 2, 5-10
X	EP 0 910 115 A (SHINETSU HANDOTAI KK) 21 April 1999 (1999-04-21) paragraphs '0038!-'0050!; figures 1,2 ---	1, 2, 5-10
X	US 5 508 934 A (MOSLEHI MEHRDAD M ET AL) 16 April 1996 (1996-04-16) column 2, line 27-59; figure 3 ---	1, 2, 5-10 -/-

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority, claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- *&* document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

4 June 2004

14/06/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Schumacher, H

INTERNATIONAL SEARCH REPORT

International Application No

/EP 03/12690

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 890 245 A (YOMOTO MASAHIKO ET AL) 26 December 1989 (1989-12-26) column 1, line 26-47; figure 5 ----	1,2,5-7, 9,10
X	US 5 994 676 A (DUTARTRE DIDIER) 30 November 1999 (1999-11-30) column 4, line 27 -column 5, line 67 ----	1-8,11
X	EP 0 618 430 A (AT & T CORP) 5 October 1994 (1994-10-05) page 7, line 7-14 ----	1,11
P,X	WO 03/069668 A (APPLIED MATERIALS) 21 August 2003 (2003-08-21) paragraphs '0025!-'0034!; figure 2 ----	1,11
A	US 6 171 641 B1 (KOBAYASHI SHIGERU ET AL) 9 January 2001 (2001-01-09) column 15, line 33-40 -----	12

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 03/12690

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
DE 3803336	A	17-08-1989	DE	3803336 A1		17-08-1989
US 6204484	B1	20-03-2001	NONE			
EP 0910115	A	21-04-1999	JP	9246200 A		19-09-1997
			EP	0910115 A1		21-04-1999
			US	6072164 A		06-06-2000
			WO	9734318 A1		18-09-1997
US 5508934	A	16-04-1996	NONE			
US 4890245	A	26-12-1989	JP	63271127 A		09-11-1988
			JP	63079339 A		09-04-1988
			JP	63166241 A		09-07-1988
US 5994676	A	30-11-1999	FR	2744139 A1		01-08-1997
			DE	69713177 D1		18-07-2002
			EP	0787839 A1		06-08-1997
			JP	9232241 A		05-09-1997
EP 0618430	A	05-10-1994	US	5305416 A		19-04-1994
			DE	69419801 D1		09-09-1999
			DE	69419801 T2		03-08-2000
			EP	0618430 A1		05-10-1994
			JP	2912157 B2		28-06-1999
			JP	6323915 A		25-11-1994
			US	5442727 A		15-08-1995
			US	5624590 A		29-04-1997
WO 03069668 3	A		NONE			
US 6171641	B1	09-01-2001	US	5707500 A		13-01-1998
			DE	4092221 C2		21-04-1994
			DE	4092221 T		30-01-1992
			WO	9109148 A1		27-06-1991
			JP	2923008 B2		26-07-1999
			JP	3232968 A		16-10-1991
			JP	3244462 B2		07-01-2002
			JP	10140349 A		26-05-1998
			JP	3244463 B2		07-01-2002
			JP	10140350 A		26-05-1998
			KR	9407608 B1		22-08-1994
			US	5815396 A		29-09-1998